

What is claimed is:

1. A wind turbine, having a self-guiding windward design, the wind turbine comprising a boomerang-shaped structure, balanced at a bottom end thereof by a usable platform serving as a counterweight and at an upper end thereof by a rotor head, the rotor head being located in such a way that a center of gravity of a rotor is on a vertical axis of a column on which the structure pivots, thus eliminating gyroscopic effects, and wherein when the rotor and the rotor head are required to tilt due to axial thrust, the rotor and the rotor head tilt, while the structure remains stationary.

2. The wind turbine in accordance with claim 1, characterized in that the rotor comprises a self-stabilizing two-bladed rotor which improves self-guiding of the wind turbine whilst in action due to the fact that the rotor is in a shape of a dihedral having an axial center of thrust situated behind, seen in a direction of incidental wind, a center of gravity of the rotor, giving the rotor independent stability, also characterized in that an application point of axial thrust is situated behind, seen in the direction of the incidental wind, a rotation axis of the column on which the structure pivots so as to improve self-guiding of the wind turbine whilst the wind turbine is in action, further characterized in that the two-bladed rotor is supported by a fork-bolt assembly situated on an axis that goes through the rotor's center of gravity, allowing the rotor to oscillate, and minimizing, due to a shock absorber, pitching moments generated by the incidental wind in low attack angles and continuous direction changes and at different speeds between upper and lower blades of the rotor, and further

characterized in that the two-bladed rotor is configurable to have a w-shape when it is required that the center of gravity remain within the two-bladed rotor.

3. The wind turbine in accordance with claim 2, characterized in that internal elements of a multiplier do not support axial thrust, pitching moments, or vibrations from the rotor, since the fork-bolt assembly responsible for transmitting motor pair, the axial thrust, the pitching moments and the vibrations from the rotor is fixed on a movable hoop of a large bearing, the fixed hoop of the bearing being linked externally to a clamp which fastens a chassis of the multiplier, which is an epicycloidal multiplier, so that the axial thrust, the pitching moments and the vibrations are transmitted from the fork-bolt assembly to the chassis of the multiplier without passing through a primary axis of the multiplier, whereby durability of axes, bearings and cogs of the multiplier is enhanced.

4. The wind turbine in accordance with claim 3, characterized in that a generator, a pump, a compressor or an element to be activated is assembled on a fixed hoop of a second bearing situated concentrically on a head of the column on which the structure pivots, thereby eliminating rotating links transmitting power, also characterized in that the wind turbine has on a movable hoop of the bearing, joined to the structure, a fixed or variable cylindered petrohydraulic servomotor for sending power to an axle of the generator, the pump, the compressor or the element to be activated, and further characterized in that a petrohydraulic plant situated on the rotor head transforms mechanical energy of the rotor into petrohydraulic energy, transmitting the petrohydraulic energy through pressure pipes to the servomotor, thus forming a closed circuit.

5. A wind turbine comprising:

a support structure having a first end and a second end, said support structure being pivotally mounted, between the first end and the second end, to a column, the column having a substantially vertical axis;

a counterweight located adjacent the first end of said support structure; and

a rotor head attached adjacent the second end of said support structure, said rotor head having a rotor with a center of gravity located on the substantially vertical axis of the column so as to reduce gyroscopic effects.

6. The wind turbine of Claim 5 wherein said rotor head is tiltably attached to the second end of said support structure such that when said rotor head and the rotor are required to tilt due to axial thrust, said rotor head tilts about said support structure, while said support structure remains stationary.

7. The wind turbine of Claim 5 wherein said support structure has an L-shaped configuration.

8. The wind turbine of Claim 5 wherein the counterweight comprises a useable platform.

9. The wind turbine of Claim 5 wherein the rotor comprises a self-stabilizing two-bladed rotor so as to improve self-guiding of the wind turbine whilst in action.

10. The wind turbine of Claim 9 wherein the rotor is configured as a dihedral having an axial center of thrust situated behind, viewed in a direction of incidental wind, a center of gravity of the rotor, so as to give the rotor independent stability.

11. The wind turbine of Claim 9 wherein an application point of axial thrust is situated behind, viewed in a direction of incidental wind, a rotation axis of the column so as to improve self-guiding of the wind turbine whilst the wind turbine is in action.

12. The wind turbine of Claim 9 further comprising a fork-bolt assembly supporting the rotor, the fork-bolt assembly being situated on an axis passing through the rotor's center of gravity, so as to allow the rotor to oscillate.

13. The wind turbine of Claim 12 wherein the fork-bolt assembly includes a shock absorber for reducing pitching moments generated by the incidental wind when the incidental wind has low attack angles, when the incidental wind exhibits continuous direction changes or when the incidental wind encounters upper and lower blades of the rotor at different speeds.

14. The wind turbine of Claim 12 wherein the rotor has a w-shape.

15. The wind turbine of Claim 12:

further comprising a multiplier having internal elements and a chassis; and

wherein axial thrust, pitching moments, and vibrations created by the rotor are transmitted through the fork-bolt assembly to the chassis of the multiplier such that the axial thrust, pitching moments, and vibrations are not transmitted through the

internal components of the multiplier so as reduce wear of the internal components of the multiplier.

16. The wind turbine of Claim 15 further comprising a bearing rotatably attaching the fork-bolt assembly to the chassis of the multiplier.

17. The wind turbine of Claim 5 wherein the column comprises a rotatable portion to which said support structure is pivotally mounted and a stationary portion, and further comprising:

- a petrohydraulic plant situated on the rotor head which converts mechanical energy of the rotor into petrohydraulic energy;

- a petrohydraulic servomotor attached to the rotatable portion of the column;

- pressure pipes connecting the petrohydraulic plant with the servomotor, thus forming a closed circuit by which the petrohydraulic energy is transmitted from the petrohydraulic plant to the petrohydraulic servomotor;

- an element to be activated attached to the stationary portion of the column;

and

wherein the petrohydraulic servomotor converts the petrohydraulic energy into mechanical energy, the mechanical energy being transmitted from the petrohydraulic servomotor to the element to be activated, thereby eliminating rotating links for transmitting power.

18. The wind turbine of Claim 17 further comprising a bearing rotatably connecting the rotatable portion of the column and the fixed portion of the column.

19. The wind turbine of Claim 17 wherein the element to be activated comprises a generator, a pump or a compressor.